

## ABSTRACT

Le Clus, F., Agenbag, J.J, Henning, H.F. and M.J. Roberts (1996)

### Interannual variability in windfield and commercial catch rates of *Austroglossus pectoralis* (Soleidae)

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Commercial catch rates of Agulhas sole *Austroglossus pectoralis* peaked several times per year and the fluctuations between months were higher than those between years. Inter-annual trends in catch rate and wind field for the period 1982-1995 were therefore assessed on a seasonal scale. The timing and strength of the wind cycle on the Agulhas bank were indexed from changes in a pressure gradient south of Cape Agulhas (CAP Index), which was linked to east-west components of the wind field on the Cape South Coast. For each season, catch rates showed different longterm trends. Catch rates in late summer (January-March) were low when either weak or strong southeasterly winds predominated, but were high when southeasterlies were moderate over a prolonged period or when the westerly components of the wind increased. Catch rates in autumn-winter (April-July) were higher than in late summer. Catch rates in autumn-winter were higher during years when the winter westerlies were strong than during years with weaker winter winds ( $r=0.77$ ;  $p<0.01$ ). catch rates declined in spring, as the southerly components of the wind increased and the westerly component declined, and increased in early summer, when the westerly component of the wind increased.

Autumn-winter catch rates usually peak in May or June, after a reversal in east-west wind direction persisting for at least two consecutive months, but also in March(1986), April(1988) and July (1989), coherent with anomalies in the timing of the seasonal reversal in the wind direction. Variability in the seasonal and annual catch rates of Agulhas sole is therefore linked to the timing of seasonal reversal in direction and strength of the wind fields.